

Corporate Motivation for Integrated Management System Implementation

Why do Firms Engage in Integration of Management Systems: A Literature Review & Research Agenda

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Abstract:

Integration of management systems such as for quality, environment, occupational health and safety, risk management, and corporate social responsibilities is a viable organisational approach to cost reduction, efficient utilization of resources, greater motivation of employees, and better compliance to social obligations and stakeholders' requirements. Identification of drivers for corporate motivation for IMS decision making and its implementation is a matter of interest for academicians, practitioners, industry, and government regulatory agencies; paradoxically literature on this subject is pretty thin. This paper describes the literature review and research agenda for the exploration of drivers of IMS implementation and factors influencing IMS implementation. The exploratory research is meant to be executed by an inductive approach through case studies in Pakistani manufacturing firms.

Keywords:

Integrated management systems (IMS), quality management system (QMS), environmental management system (EMS), occupational health and safety management system (OH&SMS), and corporate social responsibilities (CSR).

1. Introduction:

Integration is the complete harmony and alignment of strategy and operations of an organization. It means that different departments and levels speak the same language and are tuned to the same wavelength (Garvin, 1991). In the literature, integration of management systems has been discussed as the merger of the quality management system (QMS), environmental management system (EMS), health & safety management system (OH&SMS), and corporate social responsibilities (CSR). Indeed, to survive and thrive in a period of global competition, organisations need to look at every aspect of their processes, including cost cutting, well-being of their employees, the working environment and the impact that organisational operations have on their neighbors and on the local community. Moreover companies must address these issues while continuing to provide quality products and services. The concept of integrated management systems (IMS) has arisen from this need.

The motivation behind this research is that there is a need to know; why some companies integrate their management systems while others in seemingly similar context don't adopt even individual management systems. Understanding the drivers of IMS decision making and factors affecting IMS implementation is

critical for two reasons. First, it will help organisational theorists to predict behaviors regarding IMS implementation, secondly this understanding will expose the mechanism that fosters IMS implementation, allowing researchers, managers, and policy makers to better understand the dynamics of IMS implementation. Significant research opportunity exists to develop a model that identifies distinct conceptual categories of IMS motivation, corresponding antecedents and outcomes associated with each motivation, and factors that influence IMS implementation.

1(A). Research Objective:

1. To achieve better understanding of the IMS in the specific context of Pakistani manufacturing organisations.
2. To understand “Why organisations implement IMS?” and what factors influence IMS implementation

1(B). Central Research Question:

Why organisations implement IMS and what factors influence IMS implementation in Pakistani manufacturing firms

Based on this central research question, following research sub questions have been stated.

1(C). Research Sub-questions:

1. Why organisations implement IMS. (What motivates the organisations to implement IMS)?
2. What factors influence IMS implementation, and how IMS implementation process, its influencing factors and its outcomes are managed to improve organisational effectiveness through IMS implementation?

1(D). Practical value of this study

The findings of this study would be useful for the

1. Practitioners (who are looking for reasons and motivation to implement IMS and the factors that could facilitate /hamper IMS implementation),
2. Regulatory agencies (how could they motivate and facilitate the IMS implementation), and
3. Academicians for better understanding of the process of IMS decision making, implementation, and for further research in this area.

2. Literature Review

IMS is a new area of research and the existing literature in this area is pretty thin (Karapetrovic & Jonker, 2003). With the help of available literature so far, this paper first defines the commonly accepted meanings of an IMS in theory and practice and what actually constitutes an IMS. This is followed by a

discussion on the analysis of literature on IMS. This analysis of the literature is meant to identify those aspects of IMS which have been covered so far in research and the current status of research in IMS implementation.

2(A). Composition of IMS:

There is no agreement among different authors regarding the constituents of an IMS. The conventional literature considers IMS to be composed of three management systems i.e., QMS, EMS, and OH&SMS (see, for example, Jonker & Karapetrovic, 2004; Tine H. Jørgensen, Remmen, & Mellado, 2005; Karapetrovic, 2002, 2003; Karapetrovic & Jonker, 2003; Rocha, Searcy, & Karapetrovic, 2007). However more recent literature also focuses on the CSR as the essential component of an organization's IMS. Table 1 describes an analysis of literature to explore meanings of IMS as discuss in literature.

QMS	EMS	OH&SMS	CSR	Other systems	Author
✓	✓	✓			Douglas & Glen, 2000; Fresner & Engelhardt, 2004; Labodova, 2004; Mackau, 2003; Zeng, Shi, & Lou, 2007
✓	✓	✓	✓		Jonker & Karapetrovic, 2004; Tine H. Jorgensen et al., 2005; Karapetrovic, 2002, 2003; Karapetrovic & Jonker, 2003; Rocha et al., 2007
✓	✓	✓		Ergonomics	Matias & Coelho, 2002
✓	✓	✓	✓	Dependability (IEC 60300)	Karapetrovic, 2002, 2003

Table 1: Commonly described meanings (composition) of IMS in literature

Table 1 shows the commonly described meanings of IMS in the literature. As it is revealed from literature that the overall picture of IMS that emerges from the literature is that an IMS is a composite of QMS, EMS, OH&SMS, and CSR. However author believes that an IMS should be capable to integrate in it the sector specific management systems (such as GMP for pharmaceuticals, HACCP for food, WRAP for apparels, and QS 9000 for automotive industry etc) as well as the new generic management systems or the new versions of existing management systems.

An IMS is usually represented by the Venn diagram showing three components of IMS (see, figure 1)

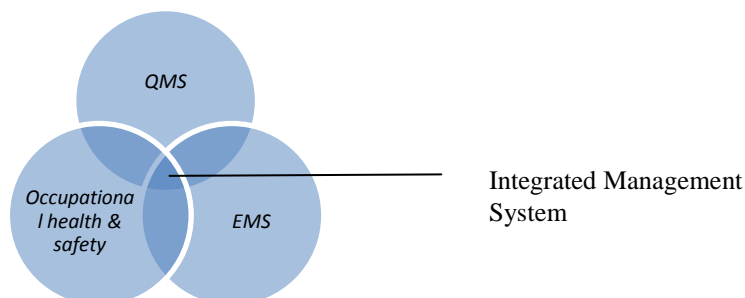
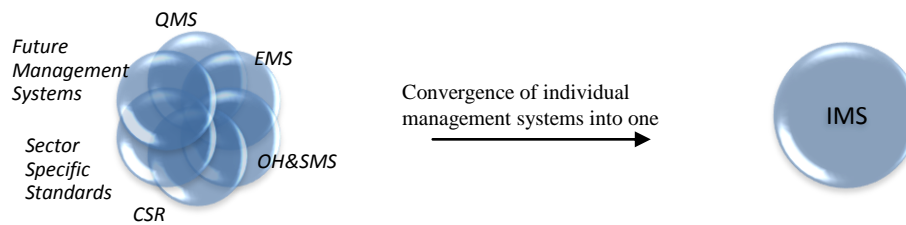


Figure 1: Venn diagram for IMS

The management systems are mushrooming and it is expected that new management systems would keep appearing. A true IMS would be one that accommodates all existing management systems and is capable of incorporating prospective management systems as well.



2(B). Areas surveyed in the IMS:

The knowledge of current status of research in IMS is imperative since it will determine future directions of research. The figure 1 shows broad categorisation of different aspects of IMS discussed in literature. These aspects include a) philosophy of integration of management systems, b) empirical research, c) strategies of integration of MSS, and d) IMS as a means to implement other management systems such as sustainable development.

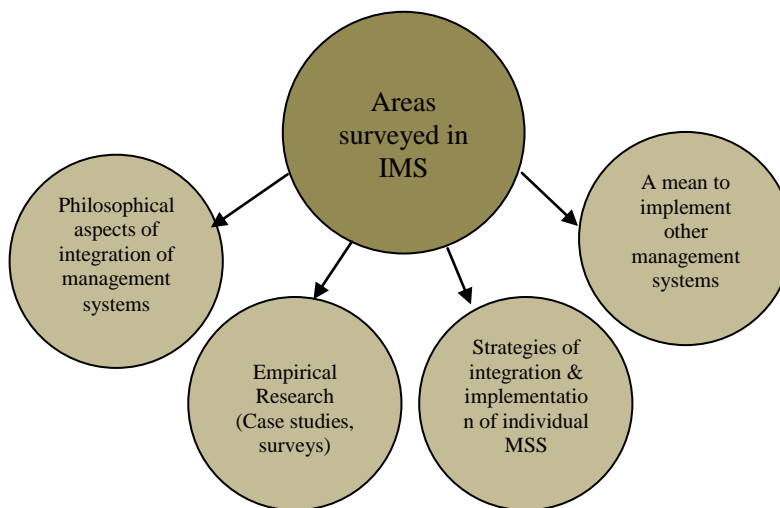


Figure1: Categorisation of areas surveyed in the IMS

Table 2 further elaborates each category of IMS discussed in literature and mentioned in figure 1.

Aspect of IMS	Explains (Main focus &/or additional focus)	Supporting Literature
Philosophical aspects	Exploration of prevalent concept of integration	Karapetrovic, 2003; Wilkinson & Dale, 1999
	Benefits from integration	McDonald, Mors, & Phillips, 2003; Wright, 2000
	Evolution of IMS from quality management.	Mangelsdorf, 1999
Empirical Research	Factors affecting IMS implementation	Salomone, 2008; (Salomone, 2008; Zeng et al., 2007; Zutshi & Sohal, 2005
	Advantages of integration	Douglas & Glen, 2000; Zutshi & Sohal, 2005
	Strategies of integration (empirical research based)	Douglas & Glen, 2000; Fresner & Engelhardt, 2004; Jørgensen et al., 2005; Labodova, 2004; Wilkinson & Dale, 2001; Zeng et al., 2007
	Role of culture and of formation of sub cultures (within a culture) in integration	Wilkinson & Dale, 2002
Strategies of integration (Normative based)	How to integrate individual management system standards into one IMS	Jonker & Karapetrovic, 2004; Karapetrovic, 2002, 2003; Karapetrovic & Jonker, 2003; Karapetrovic & Willborn, 1998
Means to implement other management systems	Means to integrate sustainability in business processes	Rocha et al., 2007
	Means to sustainable management systems	Jørgensen, 2007

Table 2: Different aspects of IMS discussed so far.

Figure 1 and table 2 describe the areas of IMS explored in research but it is also imperative to know the context in which such research has been carried out. Pettigrew & Whipp (1991) also emphasised the need of context to better understand the implementation process in addition to content and context. Table 3 thus lists the countries in which empirical research regarding IMS implementation have been carried out.

Country		Research	Author(s)
Europe	Germany	IMS for SMEs	Mackau, 2003
	Austria	Case studies in two Austrian companies	Fresner & Engelhardt, 2004
	Italy	Integration of ISO 9000 & ISO 14000	Renzi & Cappelli, 2000
		IMS: Experiences in Italian organizations	Salomone, 2008
	UK	IMS in SMEs	Douglas & Glen, 2000
		An IMS model based on Total Quality	Wilkinson & Dale, 2001
	Denmark	IMS: three different levels of integration	Tine H. Jørgensen et al., 2005
		Towards more sustainable management systems: through life cycle management and integration	Tine Herreborg Jørgensen, 2007
	Czech Republic	IMS using risk analysis based approach	Labodova, 2004
Asia	China	IMS implementation based on synergistic model	Zeng et al., 2007
Australasia	Australia	IMS: Experiences of Australian organisations	Zutshi & Sohal, 2005

Table 3: IMS empirical research subjects- List of countries

The research on the integration of management systems is really scarce. The thinness of literature on IMS has also been mentioned by many authors. Karapetrovic & Jonker (2003), for example, have put it this way, “existing literature on the theoretical aspects of IMS is still pretty thin” (p. 453) and that “...one of the lingering questions in IMS research and practice is the existence of ‘the path’ itself. Is there really one best way to integrate management systems, or are there many ways that depend on contingencies? Also, which particular elements should be integrated, and in what order?” (p.452). The literature on the “drivers of IMS” and “factors influencing IMS implementation” is even scarcer which further necessitates the need of research in this area. An understanding of the drivers and factors influencing IMS implementation is important since it will, in turn, determine the motives and incentives that could be used by practitioners and government regulatory agencies to facilitate the IMS implementation. Likewise identification of factors fostering as well as hampering IMS implementation would be of immense practical value. Also this is an area of rich academic interest and would promote further research in the integration of management systems. With that in mind the following section presents a discussion of drivers/motives of IMS and then factors influencing IMS implementation.

2(C).Motivation for IMS implementation

The motives for the decision of IMS implementation may be both intrinsic as well as extrinsic. Intrinsic motives are those that originate from socio-techno-economic arenas of an organization and could further be classified as reactive or proactive. Reactive motives arise from the outputs of processes, management is not satisfied with and thus IMS is sought for as a remedial measure. They may also result from repeated failures to comply with preset operational, financial, and/or regulatory objectives and targets. On the other hand extrinsic motives influence organization from outside environment. They may be due to requirement of customer who insists on integrated management systems or due to competition in global market which forces organisation to adopt best business practices and regulatory requirements.

What motivates organisations to implement IMS can be viewed in terms of what can be gained from IMS implementation. The benefits from the integration of management systems could be potent motive for IMS implementation. Table 4 describes a list of benefits that could be obtained from IMS implementation.

Benefits from IMS implementation		
	Benefit of IMS	Supporting literature
Documentation reduction	Elimination of documentation duplication	Douglas & Glen, 2000; McDonald et al., 2003; Zutshi & Sohal, 2005
Customer's demand	Pre requisite for business	McDonald et al., 2003
	Enhanced customer satisfaction	Douglas & Glen, 2000; Zutshi & Sohal, 2005
Cost Reduction	Cost reductions, e.g., in manufacturing, operations, and insurance premiums.	Jørgensen et al., 2005; Wright, 2000, Douglas & Glen, 2000; Zeng et al., 2007; Zutshi & Sohal, 2005; McDonald et al., 2003
Operational benefits	Operational improvements	Fresner & Engelhardt, 2004; Holdsworth, 2003; Jørgensen et al., 2005; McDonald et al., 2003
	Simplified systems	Douglas & Glen, 2000; Zutshi & Sohal, 2005
	Time saving	Zutshi & Sohal, 2005
	Better synergies between systems	Rocha et al., 2007
	Unification of internal audits	Salomone, 2008
	Unification of training activities	Salomone, 2008
	Common framework for continual improvement	McDonald et al., 2003
	Overall organisational performance improvement	McDonald et al., 2003
Resources allocation and utilization	Better allocation of resources	Zeng et al., 2007
	Saving of human resources	Salomone, 2008
	Better utilization of resources	Rocha et al., 2007
Cultural Change	Teamwork promotion	Wright, 2000
	Greater acceptance by employees	Zutshi & Sohal, 2005
	Cultural change (Learning organisation)	Wright, 2000; Zutshi & Sohal, 2005
Other benefits	Strategic planning	Zutshi & Sohal, 2005
	Holistic view	Zutshi & Sohal, 2005
	Enhanced interdepartmental communication	Douglas & Glen, 2000; Wright, 2000; Zutshi & Sohal, 2005
	Better definition of responsibilities	Salomone, 2008
	Means to sustainable development	Fresner & Engelhardt, 2004; Rocha et al., 2007

Table 4- Gains from IMS implementation

However this is worth noting that most of benefits mentioned above could be categorized in few general domains. These benefits could be broadly categorized as operational, financial, and marketing benefits. We could not find substantial research work on the corporate motivation for implementation of IMS, however we have lent theoretical and research methodological justification from the research work of Bansal & Roth (2000), Zhang et al. (2008), and Salomone (2008). This has led us to develop some preliminary and tentative drivers that could be used to steer this exploratory research. These preliminary and tentative drivers for the corporate motivation of IMS include operational, regulatory, financial, marketing, and social drivers and have been discussed in detail in what follows.

- I. *Operational drivers* are related to the routine operations of a business. They originate from the supply chain activities and are measured in terms of various performance yardsticks such as productivity,

efficiency¹, cycle time, through put rate, wastages proportion², and number of accidents etc. The important role of pressure from supply chain in engaging firms in environmental management has been mentioned by Zhang et al. (2008). Table 4 also lists the operational benefits (reported in literature) that could be gained from IMS implementation. The notable are time savings, simplified systems, better synergies between various organisational functions, and development of a common framework for continuous improvement.

- II. *Regulatory drivers* are related to the legal requirements for environment, health and safety, corporate social responsibilities, or quality requirements of products or processes. They are measured in terms of legal non conformances or inability to comply industry's self developed yardsticks. By developing the industry standards for self regulations, these firms can pre-empt cumbersome government regulations. Institutional processes can work through coercive pressures imposed by institutions that directly influence firms (DiMaggio & Powell, 1983). Failing to comply with institutional pressures, particularly imposed by urgent and more powerful stakeholders can result in loss of earnings, a damaged reputation, or even loss of the license to operate (Oliver, 1991). Firms previously fined are also on the watch list of media, government regulatory agencies and other special interest groups for further indiscretions. Such firms that have been previously fined are more vigilant to avoid non conformities next time. Firms that have been subject to fines and penalties will also become more sensitive to acceptable sustainable development practices and be more informed of what they need to do to avoid further infractions (Bansal, 2005).
- III. *Financial drivers* are related to financial gains from IMS implementation. IMS has been reported to result in cost savings directly (through audit costs reductions, certification costs reduction) and through other drivers that also lead to ultimate cost savings and improved financial portfolios , for example, operational and regulatory aspects ultimately affect financial aspects of a business. They are measured in terms of financial yardsticks such as annual profits. Social drivers arise from the expectations of employees and general community. Organisation do not operates in isolation; they interact with outside world, use and deplete natural resources, and also utilize human resources. Employees and community thus expect organisation to comply with the practices appreciated socially. Although such

¹ Productivity is calculated as ratio of output to input and efficiency is calculated as ratio of actual output to the standard output. Organisations may use different types of yardsticks to determine productivity and efficiency of processes. E.g., Partial productivity, multifactor productivity and total factor productivity.

² Toyota the Japanese automobile manufacturer, has identified the following seven types of waste as the most prominent ones: waste due to overproduction, waiting time, transportation, processing, inventory, motion, and product defect

requirements are covered by individual management systems and standards; for some of the management systems (such as CSR and health and safety) there is not sufficient regulatory push at this stage and even no ISO approved standards exist (as compared to QMS and EMS for which ISO approved standards exist). IMS highlights such issues and brings them on the top of agenda.

- IV. *Marketing Drivers*: Marketing drivers concern the pressures from the customer to implement an IMS and are measured in terms of sales figure and soft image of company. Some empirical studies (such as those conducted by (Douglas & Glen, 2000; Zeng et al., 2007; Zutshi & Sohal, 2005) have reported that IMS results in better compliance to customer requirements and thus results in positive market image. The role of marketing pressures on EMS implementation has been mentioned by Dasgupta, Laplante, Nlandu, and Wang (as cited in Zhang et al., 2008) who noted that capital markets may react negatively to the announcement of adverse environmental incidents, such as violation of permits, spills, court actions, complaints or react positively to the announcement of superior environmental performance. However the substantial role (if any) of marketing drivers in IMS implementation still remains to be explored.
- V. *Social Drivers*: Social drivers refer to the pressures on firms from community and employees to carry out practices that are socially acceptable. Indeed an organisation must endorse social responsibility and make it a part of its value system since non compliance with social responsibilities can give a bad impression (negative publicity) of organisation and affect its profitability. One such example is of Talisman, a large oil company, who in late 1990s, had to withdraw from Sudan in response to strong public pressure against its business decisions that violated social rights of inhabitants. Another example of increasing awareness of social responsibilities is the development of “Kimberley process certification scheme” which ensure that diamonds (trade) come only from conflict free source (i.e., their trade does not finance the weapons acquisition in areas under civil war).

Although the literature on the drivers of IMS implementation is really scarce, recently Salomone (2008) noted that market forces (customer, image and competitiveness), human resources, and continual improvement are potent motives for IMS implementation. However augmentation for the reason to select preliminary and tentative drivers also comes from literature in management systems other than IMS (such as EMS and sustainable development). Bansal and Howard (1997), for example, have mentioned marketing, financial, social, and regulatory drivers for sustainable development. Bansal and Roth (2000) found three motivations for corporate ecological responsiveness which are competitiveness, social responsibility and legitimation (desire of the firm to improve the appropriateness of its actions within an established set of norms, regulations, values or beliefs (Suchman, 1995). Finally Zhang et al.

(2008) noted government regulations, community participation, market demands, and pressures from supply chain play important role in engaging firms in environmental management in china.

2(D). Factors influencing IMS implementation

Indeed an important aspect of IMS research is to find out the factors that influence IMS implementation. This includes factors that facilitate IMS implementation as well as factors that hinder IMS implementation. A survey of the literature shows that this remains the least explored area in IMS research. However we find some isolated studies in Australia (Zutshi & Sohal, 2005), China (Zeng et al., 2007), Denmark (Jørgensen, 2007; Jørgensen et al., 2005), UK (Douglas & Glen, 2000), and Italy (Salomone, 2008) which attempt to identify the factors influencing IMS implementation in various contexts. However such studies have certain limitations; this has been elaborated in table 3 which provides an overview of the analysis of the empirical studies on the IMS to further elaborate the research strategies used in research, main findings and limitation of these studies.

Analysis of IMS empirical studies				
Country	Research methodology	Sample size	Main findings	Limitation
Australia (Zutshi & Sohal, 2005)	Case studies	03 Australian organisations	Benefits of integration: I. Effective strategic planning II. Better resources utilisation III. Holistic view IV. Better acceptance & understanding among employees V. Benefits from integrated training programs VI. Enhanced communication VII. Cost savings & positive market image VIII. Benefits from integrated audit and housekeeping Obstacles in integration I. Resistance from employees II. Lack of strategic planning III. Lack of expertise & consultants IV. Continually changing regulations & guidelines (such as for environmental management system) V. Need of fast reporting system	Problem of generalisability of findings from 03 case studies across larger population
China (Zeng et al., 2007)	Survey	104 firms	Factors affecting IMS implementation: Internal factors I. Human resources II. Organizational structure III. Company culture IV. Understanding and perception External factors I. Technical guidance II. Certification bodies III. Stakeholder and customers IV. Institutional environment	It is not known whether survey was country wide or some provinces wide
UK (Douglas	Survey	28 SMEs	Benefits of Integration	Having integration

& Glen, 2000; Wilkinson & Dale, 2001)			I. Less procedures II. Less paperwork III. Multi-functional auditors IV. Easier to manage systems V. More effectiveness - internally & externally better communications between staff VI. Improved image with customers VII. Reduced costs	of only QMS and EMS. Does not take into account OH&SMS and CSR
	Survey	150 firms	Develops & tests a model that describes the culture aspects.	Neither describes drivers of IMS implementation nor factors influencing IMS implementation
Denmark (Jørgensen, 2007; Jørgensen et al., 2005)	Interviews	02 firms (Danish & Spanish organisations for standardisation)	Three ambition levels of integration: from increased compatibility of system elements over coordination of generic processes to an embeddedness of an integrated management system (IMS) in a culture of learning and continuous improvement.	Problem of generalisability of findings from 02 interviews across larger population
	Archival analysis, synthesis from literature	One organisation	To achieve sustainable management systems, organisations must consider integration in life cycle perspective. An extended focus on life cycle management (LCM) is thus needed.	Problem of generalisability of findings from 01 interviews across larger population
Italy (Salomone, 2008)	Survey	103 firms (out of 103 firms, only 75 had achieved full integration for QMS, EMS and OH&SMS but not CSR)	Drivers of IMS implementation Local community pressure Customer pressure Distributor pressure Public authority pressures Competitiveness pressures Image improvement Product improvement Productivity improvement Management cost reduction New market opportunities Continual improvement Factors affecting IMS implementation Standard not clear Incompetent human resource Management difficulties Inadequate financial support Costs too high Lack of information	Excludes CSR from the IMS

Table 5: Analysis of empirical studies on IMS

The limitation of these studies include

- Firstly, many of these empirical studies (such as Douglas & Glen, 2000; Jørgensen, 2007; Jørgensen, 2005) focus merely on the benefits and strategies of integration; while others focus on the testing of models (such as Wilkinson & Dale, 2001) but no focus on the factors that influence IMS implementation.

- b) Secondly, all these studies have been conducted in more economically developed countries (except china which is although a developing country but indeed a rapidly developing economy) and none in developing countries. It remains questionable whether the research findings from few developed countries (also called industrially advanced countries) could be applicable to and generalised across large number of developing countries with under developed industrial base.
- c) Thirdly, regardless of the context in which such studies shave been executed, none of such study is widely generalisable across diverse contexts. This is best reflected in the “sample size” and “other limitations” mentioned in table 5.
- d) Fourthly, generation and accumulation of knowledge is an iterative process of continuous cycling between theory and data. Since most of the research leads from theory to data, some researchers should complete the cycle by choosing less common way, i.e., from data to theory. The surveys based studies are usually deductive in approach (see, for example, Saunders, Lewis, & Thornhill, 2006) and build upon the constructs/factors selected from the relevant literature to test their applicability in particular contexts. Such studies usually view organisational microcosms from the lens of a limited number of categories and formalization and thus blind themselves from the rich and fresh potential insights. Evered & Louis (1981) has mentioned the limitation of this approach by noting that “this approach is methodologically precise, but often irrelevant to the reality of organisation” (p. 392). Gummesson (2000) has put it this way, “even if the methods of collecting and processing data are sophisticated, the well known adage garbage in, garbage out can’t be discounted” (p.14). Thus the generation of fresh insights requires an inductive approach to research to find out constructs/factors that influence IMS implementation. These factors could later be used to establish a connection with IMS implementation through a survey type research.

3. Conceptual Research Framework

Development of a conceptual research framework is an important pre requisite for a systematic research. A conceptual research framework explains, either graphically or in narrative form, the main things to be studied - the key factors, constructs or variables- and presumed relationship among them (Miles & Huberman, 1994). A conceptual framework tells researcher what to research and what not. It keeps the researcher on the track and keeps from getting superfluous and irrelevant data. The conceptual framework for research has been shown in figure 2.

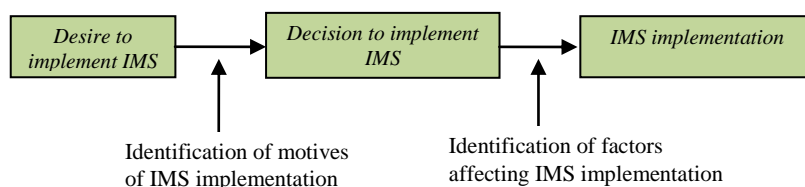


Figure 2 Provisional Research Framework

Provisional research framework consists of two areas of research.

- I. First part is concerned with identification of drivers that motivate the firms to implement IMS. This part concerns the research question “why organisations implement IMS? (What motivates the organisations to implement IMS?)
- II. Second part is meant to identify the factors that influence IMS implementation (once IMS implementation decision is made). This part concerns the research question “what factors influence IMS implementation.

The first part of the provisional research framework “identification of motives of IMS implementation” has further been elaborated in figure 3 which makes use of five preliminary and tentative drivers named regulatory, marketing, financial, social, and operational to build a preliminary and tentative framework. The purpose of such a provisional schema (as in figure 3) is to define the research scope so that research remains within predefined scope and superfluous and abundant data is not generated. However these drivers are only preliminary and tentative in the sense they are not guaranteed a place in final schema/model. Other limitations of these preliminary drivers are that, firstly, all have not been explicitly reported to affect or to be associated with IMS, rather being associated with individual components of IMS or entirely different but related aspects such as EMS or sustainable development. Secondly, these preliminary drivers have not yet been tested empirically for IMS. A conceptual research framework to identify drivers of corporate motivation of IMS has been shown in figure 3. The operational measure for each of the driver is also shown.

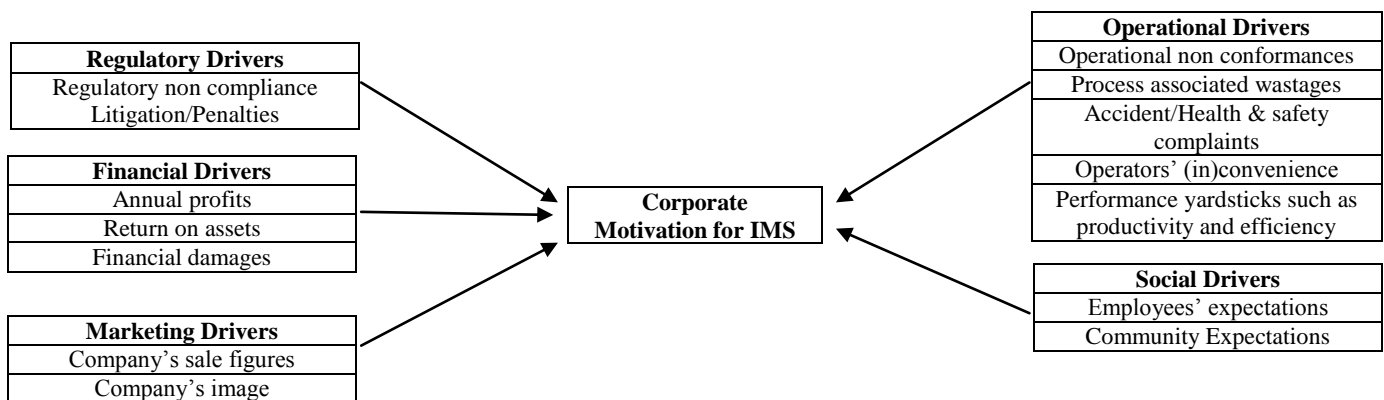


Fig. 3 Preliminary Conceptual model of corporate motivation for IMS implementation

The second part in the provisional research framework represents the area of exploration for the factors that influence IMS implementation.

4. Research Methodology

The research methodology applied to any research work depends upon the nature of research questions. Research questions “why firms implement IMS” and “what factors influence IMS implementation” could be placed in the category of exploratory research. Ghauri & Gronhaug (2005) mentioned that when research questions take the form of “how and why”; case studies are preferable. Yin (2003) notes that for questions of “what” type, any exploratory study could be used e.g., exploratory case study, exploratory survey, or an exploratory experiment. The selection of research strategy has been further elaborated in table 6.

Choosing a strategy			
Strategy	Form of research question	Requires Control of behavioural events	Focus on Contemporary events
Experiment	How, why	Yes	Yes
Survey	Who, what, where, How many, how much	No	Yes
Archival Analysis	Who, what, where, how many, how much	No	Yes/No
History	How, why	No	No
Case study	How, why	No	Yes

Table 6: Choosing a research strategy (source: Yin (2003))

As the table 6 shows that for “how” and “why” type of questions, both case studies and history research are useful. However cases studies are more suitable in circumstances when some contemporary phenomenon is to be researched and research is to be carried out in a setting that is inclusive of the specific organisational context (Yin, 2003). Case studies also make use of other sources of evidence such as direct observations, participant observations, archival records and physical artefacts. A case study is an empirical inquiry that investigates a contemporary phenomenon with its real life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2003). This means that an important strength of case study research is to take the research subjects’ context into consideration. Case studies are rich, empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources (Yin, 1994).

In order to explore the corporate motivation for IMS implementation and for identifying the factors that influence IMS implementation; an inductive approach has been proposed. To develop theory that is empirically grounded, an inductive methodology is most appropriate (Glaser & Strauss, 1967; Yin,

1989). In inductive paradigm of research, we have two most viable options, i.e., grounded theory and inductive case study (such as mentioned by Eisenhardt, 1989).

Grounded theory is an empirical research methodology meant to dig out what actually happens in practice. The grounded theory approach requires the researcher to enter field with no prior knowledge of the subject (otherwise it could put the bias in research through pre mindset). Grounded theory results in the theory development that is empirically grounded. However it is usually criticised for following reasons. Firstly the very basic assumption “researcher going in field without prior knowledge of subject and investigating in detail some empirical phenomenon seems contradictory since later would require sound (or at least some basic) knowledge of the subject”. Secondly, the approach requires understanding of the topic from the perspective of people who deal it. Thirdly, the grounded theory owing to its limited prior knowledge approach does not take into account the previous research work to build further research work on it.

However many of the criticism on grounded theory is covered by the *inductive case study approach* as described by Eisenhardt (1989). In this research approach, researcher could consult the previous research work to identify the constructs (but no hypothesis/ theory) to better ground the construct measures. However the link between the constructs cannot be established beforehand. Later approach is preferable when existing theories are to be considered and when research is based on the existing theories.

Based on conceptual model, cases are selected and data collection protocol is designed (Yin, 1994). Since IMS is an organisation wide management system that affects every function of organisation and people from all organisational functions are involved in the designing and implementation of one integrated management system, the holistic case study approach is more appropriate. The organisations involved are considered as units. Multiple holistic cases studies would be carried out followed by a cross case analysis. A further description of case study research is provided in what follows.

4(A). Characteristics of Case Study Research

Verschuren & Doorewaard (1999) have described following characteristics of case study research.

1. A small number of research units
2. labor intensive data generation
3. More depth than breadth
4. A selective , i.e. a strategic sample
5. Qualitative data and research methods
6. An open observation on site

Case studies are carried out on a small number of cases. The reason for this is that case studies are meant to get a deeper insight into the context. A better understanding of the context of the social events or actors is required. This also requires laborious data collection and then analysis. The complete understanding of the context requires various sources of data to be utilized. The common types of data sources which case studies build upon include interviews (individual &/or group), documents, direct observations, participant observations, archival records and physical artifacts (Yin, 2003). These attempts produce an overall and broader picture of research object. That is why case studies are said to be “holistic and rich in insights”. The “holism” is achieved, at least in part, through prolonged contact with data source during data collection process and the flexibility at the end of researcher. Researcher in inductive case studies (Eisenhardt’s approach) does not use any highly structured instrument for data collection. Indeed Eisenhardt approach to case studies execution is far more flexible than other research strategies; however flexibility is not the license to be unsystematic. Rather this flexibility is controlled opportunism in which researchers take advantage of the uniqueness of a specific case and the emergence of new themes to improve resultant theory (Eisenhardt, 1989). To keep research systematic, researchers need to design and follow a case study protocol that systematically describes all the activities, research instrument, procedures, and general rules to be followed during research, description of cases, time plan, bindings of researcher, analytical strategy etc. In brief a case study protocol is the “correct code of conduct of case study protocol”.

4(B). Advantages of case study:

In addition to the “holistic perspective” and their firm groundedness in the context, case studies offer other advantages owing to the use of qualitative data. The advantages of qualitative data are as follow (Miles & Huberman, 1994):

1. Collects the perceptions of the actors from an “Inside perspective”. This is in sharp contrast to other data collection techniques in which researcher remains quite dissociated from the context and collects data through tools such as telephone survey, mail survey and questionnaire etc.
2. Main objective is to understand the way local actors understand, account for and take actions in their daily life based on their perceptions of events.
3. Confidence reinforced by firm groundedness of data in local settings. Data is collected in close proximity to the specific situation
4. Greater possibility of identifying latent, underlying or non obvious issues.

Verschuren & Doorewaard (1999) have described following advantages associated with the use of case studies.

5. It is easier for the fledgling researcher to delimit this type of research into manageable portions. This would not be possible with other research methodologies such as surveys and experiments
6. Possibility of obtaining significant results despite lack of research methodological trainings. The researcher would run few risks during research process, especially in data analysis when compared to experiments and methodologies involving quantitative data.

4(C). Cases Selection:

To explore the key research questions of this research multiple case studies would be conducted. Eisenhardt & Graebner (2007) have used the term “polar types” in which a researcher samples extreme cases in order to more easily observe contrasting patterns in the data. Samples may be chosen for revelation of an unusual phenomenon, replication of findings, elimination of alternative explanations or elaboration of emergent theory. There is no ideal number for number of cases, usually 4-10 cases work well (Eisenhardt, 1989). But the selection of number of cases is always influenced by other constraints such as time, distance and resources required for the execution of research. This research is also limited by these time constraints. Therefore cases are selected in such a way that theoretical saturation is achieved within the available constraints. For this research four cases have been selected and they include a pharmaceutical manufacturing plant, an automobile assembling plant, a textile manufacturing plant, and a fertilizer manufacturing plant. These four companies have been selected primarily on the basis of their long term involvement (more than five years) in IMS implementation and secondarily due to their willingness to participate in this research. Selecting multiple cases also has the advantage it increases the generalisability of the findings and results is a comprehensive theory (Meredith, 1998).

Conclusion

Research on IMS implementation is scarce. Better understanding of corporate motivation for IMS implementation and of factors influencing implementation would help various stakeholders to facilitate IMS implementation. A provisional conceptual research framework has been proposed to identify drivers of IMS implementation and factors that influence IMS implementation. The inductive case studies have been proposed to find the answers to research questions. The research is expected to be of interest/value to practitioners, government regulatory agencies, and academicians involved in facilitating IMS implementation.

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